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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EDWARD KIM, ARASH BATENI, DAVID CHAN, and FRED NARDUZZI

Appeal 2015-006204
Application 12/644,063
Technology Center 3600

Before NINA L. MEDLOCK, AMEE A. SHAH, and ALYSSA A. FINAMORE, *Administrative Patent Judges*.

SHAH, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

The Appellants[2] appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 3, 4, 6, 7, 9, 10, and 12. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE and ENTER a NEW GROUND OF REJECTION pursuant to our authority under 37 C.F.R. § 41.50(b).

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[1] Throughout this opinion, we refer to the Appellants' Appeal Brief ("Br.," filed Oct. 14, 2014) and Specification ("Spec.," filed Dec. 22, 2009), and to the Examiner's Answer ("Ans.," mailed Apr. 6, 2015) and Non-Final Action ("Non-Final Act.," mailed May 14, 2014).

[2] According to the Appellants, the real party in interest is Teradata US, Incorporated. Br. 2.

STATEMENT OF THE CASE

The Appellants' "invention relates to methods and systems for forecasting product demand for distribution center or warehouse operations; and in particular to an improved method and system for determining distribution center or warehouse order forecasts from store forecasts of slow selling products." Spec. 2.

Claims 1, 4, 7, and 10 are the independent claims on appeal. Claim 1 (Appeal Br. 14 (Claims App.)) is illustrative of the subject matter on appeal, and is reproduced below (with added bracketing for reference):

> 1. A computer-implemented method for determining product order quantities required to meet future product demands for a distribution center, the [method] comprising the steps of:
>
> for each one of a plurality of stores:
>
> [(a)] comparing, by a computer, a beginning on-hand inventory value for said product with a minimum beginning inventory threshold value;
>
> [(b)] generating, by said computer, a random beginning on-hand inventory value for said product when said beginning on-hand inventory value is less than said minimum beginning inventory threshold value;
>
> [(c)] determining, by said computer, a sales forecast for said product; and
>
> [(d)] determining, by said computer, a store order forecast for said product, said store order forecast being determined by subtracting said random beginning on-hand inventory value from said sales forecast when said beginning on-hand inventory value is less than said minimum beginning inventory threshold value, and subtracting said beginning on-hand inventory value from said sales forecast when said beginning on-hand inventory value is not less than said minimum beginning inventory threshold value;

> [(e)] accumulating, by said computer, said store order forecasts for said plurality of retail stores to generate a distribution center demand forecast for said distribution center;
>
> [(f)] comparing, by said computer, said distribution center demand forecast with current and projected future inventory levels at said distribution center of said product; and
>
> [(g)] determining, by said computer, from distribution center demand forecast and said current and projected future inventory levels distribution center suggested order quantities necessary for maintaining a minimum inventory level sufficient to meet said distribution center demand forecast for said product.

THE REJECTION[3]

Claims 1, 3, 4, 6, 7, 9, 10, and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uhrig (US 2005/0075949 A1, pub. Apr. 7, 2005) and Cargille (US 2003/0050870 A1, pub. Mar. 13, 2003).

ANALYSIS

We are persuaded by the Appellants' arguments that the Examiner has not adequately shown that the prior art teaches the limitation of determining a store order forecast by subtracting values, as recited in limitation (d) of claim 1 and similarly recited in each of independent claims 4, 7, and 10. *See* Br. 11–13.

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[3] The Examiner objected to dependent claims 2, 5, 8, and 11 "as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." Non-Final Act. 4.

The Examiner relies on the combination of Uhrig and Cargille for teaching this limitation. *See* Non-Final Act. 5–6. Specifically, the Examiner finds that Uhrig teaches determining the store order forecast by subtracting a beginning inventory value from the sales forecast (*see id.* at 5 (citing Uhrig ¶¶ 37–41); *see also* Ans. 2–3[4] (citing Uhrig ¶¶ 71, 73–75, 82, 92, 93, 105, 107)), and that Cargille teaches a random beginning inventory on-hand value (Final Act. 6, Ans. 3).

However, we agree with the Appellants that the Examiner has not adequately shown how Uhrig and/or Cargille teaches determining the store order forecast by subtracting the random beginning inventory value from the sales forecast when the beginning inventory value is less than a minimum threshold value and subtracting the beginning inventory value from the sales forecast when the beginning inventory value is not less than the minimum threshold value. *See* Br. 12–13. Uhrig discloses determining and analyzing inventory forecast and strategy data (*see, e.g.*, Uhrig ¶¶ 39, 40, 74) using forecasting algorithms known in the art, including probability distributions for random variables (*id.* ¶ 82). Uhrig further discloses storing inventory data including on order, work in progress, on hand, back order, available, and allocated quantities (*id.* ¶ 41), and a user, viewing such data, noticing that the forecasted demand is less than the on-hand inventory (*id.* ¶ 93).

Although Uhrig discloses using forecasting algorithms, Uhrig does not specifically disclose that the algorithms include subtracting a random or non-random beginning inventory value from the forecasted value depending

[4] We note that all of the pages of Answer are labeled "Page 1." We consider the first page to be page 1, and the second, third, and fourth pages to be pages 2, 3, and 4, respectively.

on whether the beginning value is less than a minimum threshold value, as required by the claims. We do not see in the portions of Uhrig cited by the Examiner, and the Examiner does not adequately explain, how Uhrig discloses or teaches determining the forecast by the subtracting manner recited. We further do not see, and the Examiner has not adequately explained, how Cargille cures this deficiency.

Based on the foregoing, we are persuaded of error on the part of the Examiner in the rejection of independent claims 1, 4, 7, and 10 under 35 U.S.C. § 103(a). Thus, we do not sustain the Examiner's rejection under § 103(a) of independent claims 1, 4, 7, and 10, and of dependent claims 3, 6, 9, and 12.

NEW GROUND OF REJECTION

Pursuant to our authority under 37 C.F.R. § 41.50(b), we reject claims 1, 3, 4, 6, 7, 9, 10, and 12 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. We find the claims ineligible for patent protection because they are directed to a non-statutory abstract idea.

Under 35 U.S.C. § 101, a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013)). The Court has, thus, made clear that "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts

are not patentable, as they are the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).

Following the Supreme Court, the Federal Circuit has similarly held that mental processes are not patent-eligible subject matter. Therefore, the court has held that methods which can be performed entirely in the human mind are unpatentable not because "there is anything wrong with claiming mental method steps as part of a process containing non-mental steps," but rather because "methods which can be performed *entirely* in the human mind are the types of methods that embody the 'basic tools of scientific and technological work' that are free to all men and reserved exclusively to none." *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (citation omitted).

The Supreme Court in *Alice* reiterated the two-step framework, set forth previously in *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. The first step in that analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.* If so, the second step is to consider the elements of the claims "individually and 'as an ordered combination"' to determine whether the additional elements "'transform the nature of the claim' into a patent-eligible application." *Id.* (citing *Mayo*, 132 S. Ct. at 1298). In other words, the second step is to "search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (alteration in original)

(citing *Mayo*, 132 S. Ct. at 1294). The Court acknowledged in *Mayo*, that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 132 S. Ct. at 1293. We, therefore, look to whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea, and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

Under the first step of the analysis, the claimed subject matter of claims 1, 3, 4, 7, 9, 10, and 12 is directed to determining product order quantities for a distribution center or store. *See* Br. 14, 16, 17, 19 (Claims App.). Further, according to the Specification, the invention relates to "forecasting product demand for distribution center or warehouse operations; and in particular to an improved method and system for determining distribution center or warehouse order forecasts from store forecasts of slow selling products." Spec. 2. The Specification discusses the problems of the inability of parties to "synchronize the effective distribution of goods" so as to "maximiz[e] productivity throughout the demand chain and effectively respond[] to the needs of the consumer" (*id.*), and of currently used methods for forecasting and determining store quantities (*id.* at 3). The Specification thus provides "an improved methodology for forecasting product sales and determining suggested store order quantities and warehouse demand forecasts for low inventory, very slow selling products." *Id.* In that context, the claims are directed to forecasting and determining product order quantities, a mathematical algorithm for organizing human activity and a fundamental economic practice — an

abstract idea similar to those of *Parker v. Flook*, 437 U.S. 584 (1978) (mathematical algorithm used for adjusting an alarm limit); *Elec. Power Grp. LLC v. Alstom*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (collecting information and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category."); *In re Meyer*, 688 F.2d 789, 795–6 (CCPA 1982) (identifying probable locations of malfunctions is a "mathematical algorithm representing a mental process that has not been applied to physical elements or process steps"); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (method by which commodities buyers and sellers could hedge, or protect, against risk of price changes); *and Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1333 (Fed. Cir. 2015), cert. denied, 136 S. Ct. 2510, 195 L. Ed. 2d 841 (2016) (using organizational and product group hierarchies to determine a price). Here, the claims involve nothing more than generating and calculating data to create and evaluate forecasts, without any particular inventive technology, i.e., an abstract idea. *See Elec. Power Grp.*, 830 F.3d at 1354.

Under the second step of the analysis, we find neither independent claims 1, 4, 7, and 10 nor dependent claims 3, 6, 9, and 12 have any additional elements, alone or in combination, that amount to significantly more to transform the abstract idea of gathering and mapping data to align tasks and objectives into a patent-eligible invention. Independent claim 1 and dependent claim 3 recite a method for determining product order quantities comprising comparing inventory data, generating inventory data, determining sales, store, and demand forecasts, comparing forecast data, and determining order quantities. Br. 14, 15 (Claims App.). Similarly,

independent claim 4 and dependent claims 6 and 9 recite a method for determining product order quantities comprising comparing inventory data, generating inventory data, and determining sales and store forecasts. *Id.* at 16–19. Any general purpose computer available at the time the application was filed would have been able to perform these functions. The Specification supports that view. *See* Spec. 5, Fig. 1 (showing a generic engine/server, i.e., computer). Independent apparatus claim 7 recites a system comprising a computer, i.e., a general computer, to perform the method of claim 1. Br. 17 (Claims App.). Similarly, independent apparatus claim 10 and dependent claim 12 recite a system comprising a computer, i.e., general purpose computer, medium causing a generic processor to perform the method of claim 4. *Id.* at 19, 20. The introduction of a computer to implement an abstract idea is not a patentable application of the abstract idea. *Alice*, 134 S. Ct. at 2357–58. The computer implementation here is purely conventional and performs basic functions. *See id.* at 2359–60. The claims do not purport to improve the functioning of the computer itself, nor do they effect an improvement in any other technology or technical field. *See id.* at 2359.

Thus, under the two-part analysis, we find that claims 1, 3, 4, 6, 7, 9, 10, and 12 cover claimed subject matter that is judicially-excepted from patent eligibility under § 101.

Therefore, we enter a new ground of rejection of claims 1, 3, 4, 6, 7, 9, 10, and 12 under 35 U.S.C. § 101.

DECISION

The Examiner's rejection of claims 1, 3, 4, 6, 7, 9, 10, and 12 under 35 U.S.C. § 103(a) is REVERSED.

A NEW GROUND OF REJECTION has been entered for claims 1, 3, 4, 6, 7, 9, 10, and 12 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." 37 C.F.R. § 41.50(b) also provides that the Appellant(s), WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

REVERSED; 37 C.F.R. § 41.50(b)